

TABLE OF CONTENTS

INTRODUCTION

Chapter 1. Intensively Monotone Operators and Their Properties	1
1.1. Main theorems on uniqueness of positive solutions of operator equations	1
1.2. Examples of intensively monotone operators	11
1.3. Examples of strongly \mathcal{E} -positive families	16
Chapter 2. Characterization Problems Associated With Properties of Linear Statistics	23
2.1. An extension of H.Cramér and G.Polya's theorems	23
2.2. Characterizations of the normal distribution by proper- ties of random linear forms	28
2.3. Characterizations of stable laws by properties of iden- tical distribution of random linear forms	33
2.4. Characterizations of certain laws arising from the pro- blem of identical distribution of sums with a random number of random variables. Some limit theorems	42
2.5. Characterization of the normal distribution by the pro- perty of zero regression of a linear statistic on another one	55
2.6. Characterization of stable and some other laws by the property of zero regression of a linear statistic on another one	62
Chapter 3. Characterization Problems Associated With Non-linear Statistics and Problems of Reconstruction of Distribu- tions	71
3.1. Characterizations of distributions by properties of or- der statistics	71

3.2. On reconstruction of a distribution by distributions of some statistics	84
Chapter 4. On Some Problems of Characterization of Distributions Associated With Mathematical Theory of Reliability	101
4.1. Preliminaries	101
4.2. Characterization of distribution of lifetime of elements by reliability properties of systems	101
4.3. Characterization of the exponential distribution by relevation-type equations	108
4.4. Some versions of averaged lack of memory property	117
4.5. Records	125
4.6. On reconstruction of distribution of failures by the ratio of reliabilities of some systems	130
Chapter 5. Characterizations of Multivariate Distributions	133
5.1. Introductory remarks	133
5.2. Characterization of the normal distribution in Hilbert space	133
5.3. Characterization of the Gaussian distribution in Euclidean space	138
5.4. A definition of the Laplace distribution in Hilbert space	144
5.5. On some bivariate extension of the exponential distribution	149
5.6. On reconstruction of distribution of a random vector by the distribution of a component of the sum of independent identically distributed terms	157
Comments	161
Bibliography	167
Subject Index	171